

Amendments to the Specification

Please replace the paragraph on page 2 spanning lines 1 – 25 with the following amended paragraph:

For this purpose, and according to a first feature, the invention proposes a device for determining the absolute angular position of a turning device with respect to a fixed structure, said device includes:

- An encoder intended to be placed in rotation together with the turning device, said encoder includes a main multipolar track and a multipolar track called “top turn” which are concentric, this top turn track includes M angular-distributed singularities;
- A fixed sensor arranged with respect to and at a gap distance from the encoder, including at least three sensing elements where at least two are positioned with respect to the main track so as to deliver two periodic electrical signals S1, S2, in quadrature, where at least one is positioned with respect to the top turn track so as to deliver an electrical signal S3, the sensor includes a suitable electronic circuit, so that from signals S1, S2 and S3, it delivers two squared digital position signals A, B in quadrature which represent the angular position of the turning device and a top turn signal C in the form of M pulses per turn of the encoder;
- A processing device for signals A, B, C which includes a means for counting suited to determine, starting from the initial positions, the variations of the angular position encoder;
- Means for measuring the angular position of the turning devices with an angular uncertainty $\Delta\theta$ $[[\vartheta T]]$;

in which the M singularities are each representative of an absolute angular position of the turning device and are distributed over the top turn track with an angular separation between each of them greater than $2 \Delta\theta$ $[[\vartheta T]]$, the processing ~~devices~~ device includes means for updating the initial position which, upon detecting a pulse, are capable of discriminating the pulse detected as a function of the angular position coming from the means of measurement and assigning, with respect to the initial position, the absolute angular position value associated with said pulse.

Please replace the paragraph on page 4 spanning lines 18 – 20 with the following amended paragraph:

According to the representation in figure 1, the main tracks 1a, arranged inside the ring, and top turn 1b, arranged toward the outside of the ring, including 24 pairs of poles 1c, the pole pairs 1c from the top turn track 1b have a phase lag ϕ ~~phase lag ϕ~~ with respect to those of the main track 1a.

Please replace the paragraph on page 4 spanning lines 21 – 24 with the following amended paragraph:

Each singularity 1b1 is formed by a pair of poles 1c, the width of the poles is arranged so that a pole is out-of-phase by $-\phi$ $[-I]$ with respect to the corresponding pole of the main track 1a. Thus, each signal pulse C corresponds to detection of the phase lag reversal between the main track 1a and the top turn track 1b.

Please replace the paragraph on page 6 spanning lines 3 – 5 with the following amended paragraph:

In addition, the determination device includes the means for measuring 7 the angular position of the turning device with an angular uncertainty $\Delta\theta$ $[[\vartheta T]]$. The means for measurement 7 may include electromechanical means associated with the turning device, such as a potentiometer.

Please replace the paragraph on page 6 spanning lines 18 – 21 with the following amended paragraph:

With the set of the measurement means, the angular position of the turning device can only be obtained with an uncertainty of $\Delta\theta$ $[[\vartheta T]]$ which is too significant to be able to determine the absolute angular position of the turning device with sufficient precision within the scope of the applications envisaged. Effectively the uncertainty $\Delta\theta$ $[[\vartheta T]]$ is typically between 10° and 60°.

Please replace the paragraph on page 7 spanning lines 18 – 22 with the following amended paragraph:

According to the invention, it is thus possible, after commissioning the device, to learn the absolute position of the encoder 1, and thus the position of the associated turning device, after it has turned through a maximum angle equal to $2 \Delta\theta$ $[[\vartheta T]]$. In addition, the absolute angular position is determined with an accuracy greater than $\Delta\theta$ $[[\vartheta T]]$ which no longer depends on the resolution of the means for measurement 7.

Please replace the paragraph on page 7 spanning lines 27 – 29 with the following amended paragraph:

It can also be foreseen that the singularities 1b1 are not equidistant on the top turn track 1b, and specifically if the uncertainty $\Delta\theta$ $[[\vartheta T]]$ is not constant as a function of the measured angular position.